

REMARKS

Claims 1 and 3-19 are pending in the above-identified application. Support for the change to claim 1 is found at the bottom of page 9 of the specification. Support for new claim 6 is found at the top of page 10 of the specification. Support for new claims 7-19 is found at pages 13-16 of the specification. It is submitted that all of the presently pending claims are fully supported by the present specification.

Issues Under 35 U.S.C. 102(b)

Claim 1 has been rejected as being under 35 U.S.C. 102(b) as being anticipated by Kim '828 (USP 5,184,828). This rejection is traversed for the following reasons.

Present Invention and Its Advantages

The present invention is directed to a golf ball having an inner core, an outer core with a thickness of 0.2 to 1.3 mm, and hardness properties such that the surface hardness of the outer core is lower than the surface hardness of the inner core by 2 to 30 JIS-C. Additional dependent claims have been added which include narrower ranges for these and other features. The golf ball of the present invention exhibits advantageous properties as

evidenced by the comparative test results presented in the present specification. For example, note that Comparative Examples 1, 2 and 4 having outer core thicknesses of 1.7, 2.0 and 2.0 mm, respectively (see Table 8 at page 37 of specification) exhibit inferior flight performance properties and shot feel properties when compared to Examples 1-12 (present invention) as shown by Comparing the results in Examples 9-11 at pages 38-40 of the specification. Thus, it is necessary to employ the appropriate combination of dimensions and hardness property features in order to achieve the advantages of the present invention.

Distinctions Between Present Invention and Kim '828

Kim '828 discloses a three-piece solid golf ball having an inner core of two sections and a cover. The inner core is shown with a diameter of 23 to 35 mm, and a hardness expressed in Shore D terms of 30 to 62, while the outer layer of the inner core has a diameter of 36 to 41 mm, and a hardness of 30 to 56 Shore D. At column 1, lines 42-60 of Kim '828, the invention is described as a solid three-piece golf ball with a core assembly having an inner core and an outer layer and a cover, which is characterized by the following features: (a) the inner core has a diameter in the range of 23 to 35 mm and hardness in the range of 30 to 62 Shore D; (b)

the outer layer of the inner core has a diameter in the range of 36 to 41 mm and hardness in the range of 30 to 56 Shore D; (c) the golf ball has a maximum hardness in Shore D in the range of 46 to 62 Shore D at the outer site of the inner core, which is located at the interface between the inner core and the outer layer of the golf ball.

Kim '828 discloses Examples 1 and 2 in Table 1 at columns 7-10. In these examples, the inner core has a diameter of 29.7 mm, and the outer core has an outer diameter of 38.7 mm or a thickness of 10 mm. Also, the difference in hardness (Shore D) of the inner surface of the inner core at approximately 15 mm from the center, and the surface of the outer core just outside 18 mm from the center is one (Shore D).

Kim '828 fails to disclose any examples of golf balls having an outer core with a thickness as small as 1.3 mm as in the present invention. The Office Action assumes that the outer core can have this low thickness, though it appears from a review of the examples of Kim '828 which require a thickness of 10 mm that the golf ball design described in Kim '828 does not contemplate such a thin outer core as one having a thickness of only about one mm as in the present invention.

Kim '828 also fails to require that the difference between the inner core surface hardness and outer core surface hardness be at least two JIS-C as in the present invention. In this regard, note that some newly added dependent claims require a greater minimum amount of surface hardness difference. Note that Examples 1 and 2 of Kim '828 only show an apparent difference in Shore D of one.

Consequently, Kim '828 fails to recognize the advantages of the present invention including advantageously improved flight performance and shot feel properties which require the combination of appropriate dimensions and hardness properties. It is clear that Kim '828 fails to recognize the advantages of the present invention, since all of the examples of Kim '828 employ an outer core having a thickness which is much greater than the thickness of the outer core of the golf ball of the present invention. Since Kim '828 discloses only examples having an outer core outside the present invention, fails to provide any suggestion to select appropriate inner core/outer core diameters to arrive at a thin outer core thickness as employed in the present invention, and fails to recognize any advantages associated with improved flight performance or shot feel properties achieved by the present invention, Kim '828 fails to provide a basis for asserting either anticipation under 35 U.S.C. 102 or obviousness under 35 U.S.C.

103. With regard to anticipation under 35 U.S.C. 102, Kim '828 clearly fails to provide any examples having all the elements of the present invention including a thin outer core and provides only generic ranges for the diameters of the inner and outer cores which must both be selected appropriately in order to even approach the dimensions of the golf ball of the present invention, such that Kim '828 falls far short of the standard for anticipation required by the case law, such as in *In re Petering*, 133 USPQ 275 (CCPA 1962). With regard to obviousness under 35 U.S.C. 103, Kim '828 provides specific examples in Examples 1 and 2 which are contrary to the present invention and have outer core dimensions far outside the present invention. Therefore, significant patentable distinctions exist between the present invention and Kim '828.

Issues Under 35 U.S.C. 103(a)

Claim 3 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Kim '828 in view of Hanada '537 (USP 4,483,537).

Claim 4 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Kim '828. In this regard, it is noted that claim "3" is mentioned, though it is clear from the context of the comments that claim 4 was intended.

Claim 5 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Kim '828 in view of Horiuchi '312 (USP 5, 702,312).

As noted above, significant patentable distinctions exist between the present invention and Kim '828 with respect to claim 1. Since claims 3-5 all depend from claim 1 and include the features of claim 1, the distinctions noted above also apply with respect to claims 3-5 and Kim '828 and are deemed repeated herein. These rejections are also traversed for the following reasons.

Distinctions Between Present Invention and the Hanada '537 and Horiuchi '312 Documents

Hanada '537 discloses a golf ball having a core which is formed using a metal salt co-crosslinking agent, including zinc acrylate.

Hanada '537 fails to disclose or suggest a three-piece golf ball as in the present invention which includes an inner core, outer core and cover. Rather, Hanada '537 is directed a two-piece golf ball having a solid core and a cover. Hanada '537 fails to disclose or suggest the significant dimensions and hardness properties associated with the golf ball of the present invention. Therefore, significant patentable distinctions exist between the

present invention and Hanada '537. It is further noted that Hanada '537 cannot be combined with Kim '828, since Hanada '537 is directed to a two-piece golf ball whereas Kim '828 is directed to a three-piece golf ball.

Horiuchi '312 discloses a solid golf ball which may have a core formed from two layers with dimensions as described at column 2, lines 52-60. Horiuchi '312 discloses that the corresponding inner and outer cores may be formed from the same rubber composition or "another thermoplastic resin," (column 2, lines 50 to 56).

Horiuchi '312 fails to disclose or suggest any differences between the hardness properties of the surfaces of the inner and outer cores as in the golf ball of the present invention. Further, the fact that the inner and outer cores may be made from the same rubber composition, and presumably have the same hardness properties, indicates that Horiuchi '312 describes embodiments which are inconsistent with the requirements of the golf ball design described in Kim '828 wherein the inner core and outer core surfaces must have different hardness properties. Therefore, significant patentable distinctions exist between the present invention and Horiuchi '312. Further, Horiuchi '312 cannot be combined with Kim '828.

It is submitted for the reasons stated above that the present claims define patentable subject matter such that this application should now be placed condition for allowance.


Pursuant to the provisions of 37 C.F.R. §§ 1.17 and 1.136(a), the Applicants hereby petition for an extension of one (1) month to July 2, 2004, in which to file a reply to the Office Action. The required fee of \$110.00 is enclosed herewith.

If any questions arise regarding the above matters, please contact Applicant's representative, Andrew D. Meikle (Reg. No. 32,868), in the Washington Metropolitan Area at the phone number listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,  
BIRCH, STEWART, KOLASCH & BIRCH, LLP

By

  
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